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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,214	12/05/2003	Gregory T. Huber	S9025.0330	2468
63725	7590	07/07/2009		
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EXAMINER				
LSTVOYB, GREGORY				
ART UNIT		PAPER NUMBER		
1796				
MAIL DATE		DELIVERY MODE		
07/07/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/730,214

**Applicant(s)**

HUBER ET AL.

**Examiner**

GREGORY LISTVOYB

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 11-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 11-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/02/2009 has been entered.

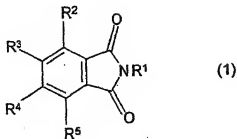
### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 11-21 rejected under 35 U.S.C. 103(a) as being unpatentable over Winter et al (WO 02/0234840, cited with equivalent US 6821335) herein WO 02/34840 in combination with Patil et al (US 5633326) herein Patil (both cited in the previous Office Action).

WO 02/34840 teaches a pigment dispersant with the following formula:



where

R<sup>1</sup> stands for a straight-chain, branched or cyclic aliphatic radical having 10 to 30 carbon atoms; for an alkenyl radical having 10 to 30 carbon atoms.

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are identical or different and denote hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>1</sub>-C<sub>10</sub> alkoxy, halogen, -OR<sub>6</sub>, -NR<sub>6</sub>R<sub>7</sub>, -COOR<sub>6</sub>, -CONR<sub>6</sub>R<sub>7</sub>, "NR<sub>6</sub>" COR<sub>7</sub>, SO<sub>2</sub>NR<sub>6</sub>R<sub>7</sub>, -SO<sub>3</sub>M, -NO<sub>2</sub>, -CN or CF<sub>3</sub>, R<sub>6</sub> and R<sub>7</sub> standing for H or an alkyl radical having 1 to 10 carbon atoms and M standing for one equivalent of a 1 to 3 valent cation.

Therefore, when R<sup>2</sup>, R<sup>4</sup> and R<sup>5</sup> radicals are Hydrogens and R<sup>3</sup> is COOR<sub>6</sub>, where R<sub>6</sub> is Hydrogen, the formula above represents imide based on 1,2,4-benzenetricarboxylic anhydride.

WO 02/34840 discloses a polyalkyl benzimide polymeric dispersant for use in printing ink compositions, comprising the reaction product of a polyalkylene amine with up to C<sub>30</sub> aliphatic chain with phthalic anhydride (see Claim 1), where colorant dispersion comprising at least 45%wt ( 5-60%wt), 0.1-15% of the dispersant (see

Column 3, line 20, meeting the limitations of claims 18-19) and having viscosity lower than 150Pas.

Note that WO 02/34840 does not teach viscosity of the dispersion, having at least 45% of colorant. However, data, presented in Tables (see Column 9 and 10) show that viscosity value at 35% of pigment content is 209 mPa, which is 0.209Pa. Therefore, it would have been obvious to an artisan that viscosity at 45% of colorant would not exceed 150Pa.

Note that although WO 02/34840 discloses long-chain alkyl radical, it does not teach a reaction product, specifically containing polyisobutylene (PIB).

PIB is a branched aliphatic compound of a formula:  $(C(CH_3)_2-CH_2)_n$

Winter teaches a straight-chain, branched or cyclic aliphatic radical having 10 to 30 carbon atoms (see R1 above). Therefore, disclosure of Winter encompasses the definition of PIB (In other words, Winter's disclosure may include PIB as a branched alkyl chain with up to 30 carbon atoms).

Polyisobutylene oligomer used in the Application examined has Mn more than 500, which is comparable with C30 alkylene chain disclosed in WO 02/0234840 (at 30 carbons molecular weight of the alkyl chain is equal to 420-450 Daltons, depending on branching. In addition, molecular weight of PIB is not defined in the Claims).

Therefore, the above ingredients are homologs. In accordance to MPEP 2144.09 the

structural analogs are *prima facie* obvious in the absence of showing unexpected results.

In addition, Patil teaches a dispersant, based on polyisobutylene succinimide (see Column 13, line 50 and Column 3, line 30).

Patil teaches that the above polymer has very good dispersing properties in wide variety of environment (Column 24, line 45). In addition, due to a presence of tert-butyl group, PIB possesses antioxidant properties.

Therefore, it would have been obvious to a person of ordinary skills in the art to replace C30 alkyl to PIB in WO 02/34840 in order to enhance dispersing properties and increase resistance to oxidation of the composition.

Regarding Claims 13-15, WO 02/34840 discloses laked organic pigments, such as naphthol pigments (Column 3, line 5).

In reference to Claim 16, WO 02/34840 does not disclose pigments listed in the claim. However, WO 02/34840 teaches the following examples of organic pigments in the sense of the invention are monoazo pigments, diazo pigments, disazo condensation pigments, laked azo pigments, triphenylmethane pigments, thioindigo pigments, thiazine indigo pigments, perylene pigments, perinone pigments, anthanthrone pigments, diketopyrrolopyrrole pigments, dioxazine pigments, quinacridone pigments,

phthalocyanine pigments, isoindolinone pigments, isoindoline pigments, benzimidazolone pigments, naphthol pigments and quinophthalone pigments, preference being given to anthanthrone pigments, dioxazine pigments, and phthalocyanine pigments, and also acid to alkaline carbon blacks from the group of the furnace blacks or gas blacks.

Examples of Suitable inorganic pigments are titanium dioxides, zinc sulfides, iron oxides, chromium oxides, ultramarine, nickel and chromium antimony titanium oxides, cobalt oxides, and bismuth vanadates.

The position is taken that the above pigments encompass the ones listed in the claim 16.

Regarding Claim 17, WO 02/34840 does not disclose 65% colorant present. WO 02/34840 teaches 5-60% wt of colorant.

In the relevant case law (see *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985), where Claims to titanium (Ti) alloy with 0.8% nickel (Ni) and 0.3% molybdenum (Mo) were not anticipated by, although they were held obvious over, a graph in a Russian article on Ti-Mo-Ni alloys in which the graph contained an actual data point corresponding to a Ti alloy containing 0.25% Mo and 0.75% Ni. (see also MPEP 2131.03).

Therefore, it would have been obvious to a person of ordinary skills in the art to increase colorant load in WO 02/34840 to 65% wt , make the composition more economically efficient.

The ingredient content is close enough to one of the claim (i.e. 60% wt vs 65% wt) that an artisan would expect the respective compositions to have the same properties.

Regarding Claims 20-21, WO 02/34840 discloses broad range of applications, such as colorants for electrophotographic toners, sprayable colorants. It is cover variety of shapes and materials, such as glass, ceramic, concrete, etc. Therefore, the above composition is applicable as lithographic printing ink.

### ***Response to Arguments***

Applicant's arguments filed on 6/02/2009 have been fully considered but they are not persuasive.

Applicant argues that Winter's formula includes a long list of possible combinations.



However, when the species is clearly named, the species claim is anticipated no matter how many other species are additionally named. *Ex parte A*, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990) See also MPEP 2131.02.

Applicant submits that when Winter provides guidance about what selections should be made at column 2, lines 37-42, trimellitic based compounds are excluded -- R3 can only be COOMe and cannot be COOH.

This is incorrect. There is no proviso, limiting R3 radical found in the Winter.

Applicant argues that Winter teaches the compound of formula I is the reaction product of a cyclic anhydride with a fatty amine. Polyisobutylene amine (PIB) is not a fatty amine.

This is incorrect. According to Winter's formula (1), R1 can be represented by either unsaturated or saturated hydrocarbon. In the first case it is a reaction product of an anhydride and fatty amine. In opposite when R1 is saturated alkyl, the starting material is saturated amine.

Applicant further argues the following issues:

1. Winter's cyclic imide alone is not a dispersant.;
2. Aliphatic part of the above imide is not polyisobutylene.

Examiner disagrees. Regarding first issue, Winter's imide has the ingredients of the same nature (trifunctional imide and aliphatic chain) as ones of the Application. In addition, Winter teaches that his compound is used in dispersions of colorants (see Column 1, line 5). Therefore, it should have the properties of the dispersant.

In reference to the second issue, Winter's formula reads on polyisobutylene, even though the reference does not expressly teach this component.

In addition, secondary reference (Patil) expressly teaches a dispersant, which includes polyisobutylene fragment.

Regarding Patil, Applicant argues that the reference uses succinimide instead of trimellitic anhydride.

Examiner disagrees. Patil is a secondary reference. It applies for modification of primary reference (Winter), which teaches trimellitic anhydride and long alkyl fragment.

Examiner considers Amendments to claim 1. As a result, Rejection under 35 USC 102(b) based on Franz has been withdrawn.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY LISTVOYB whose telephone number is (571)272-6105. The examiner can normally be reached on 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GL  
/GREGORY LISTVOYB/  
Examiner, Art Unit 1796